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- ▶ Your knee and leg have regained normal strength.
- ▶ You are able to jog straight ahead, then sprint without limping.
- ▶ You are able to do 45-degree, then 90-degree cuts
- ▶ You are able to jump on both legs, then on the injured leg without pain.

How can I prevent patellofemoral pain?

Patellofemoral pain syndrome can best be prevented by strengthening your thigh muscles, particularly the inside part of this muscle group. It is also important to wear shoes that fit well and that have good arch supports.

Rehabilitation Exercises

You can do the hamstring stretch right away. You can start doing the patellar mobility exercise as soon as it is not too painful to move your kneecap. When the pain in your knee has decreased, you can do the quadriceps stretch and start strengthening the thigh muscles using the rest of the exercises.

1. PATELLAR MOBILITY: Sit with your injured leg outstretched in front of you and the muscles on the top of your thigh relaxed. Take your index finger and thumb and gently press your kneecap down toward your foot. Hold this position for 10 seconds. Return to the starting position. Next, pull your kneecap up toward your waist and hold it for 10 seconds. Return to the starting position. Then, try to gently push your kneecap inward toward your other leg and hold for 10 seconds. Repeat these for approximately 5 minutes.

2. QUADRICEPS STRETCH: Stand an arm's length away from the wall, facing straight ahead. Brace yourself by keeping the hand on the uninjured side against the wall. With your other hand, grasp the ankle of the injured leg and pull your heel toward your buttocks. Don't arch or twist your back and keep your knees together. Hold this stretch for 20 seconds. Repeat 3 times.

3. QUADRICEPS ISOMETRICS: Sitting on the floor with your injured leg straight and your other leg bent, press the back of your knee into the floor by tightening the muscles on the top of your thigh. Hold this position 10 seconds. Relax. Do 3 sets of 10.

4. STRAIGHT LEG RAISE: Lie on your back with your legs straight out in front of you. Tighten up the top of your thigh muscle on the injured leg and lift that leg about 8 inches off the floor, keeping the thigh muscle tight throughout. Slowly lower your leg back down to the floor. Do 3 sets of 10.

5. STEP-UP: Stand with the foot of your injured leg on a support (like a block of wood) 3 to 5 inches high. Keep your other foot flat on the floor. Shift your weight onto the injured leg and straighten the knee as the uninjured leg

comes off the floor. Lower your uninjured leg to the floor slowly. Do 3 sets of 10.

6. WALL SQUAT WITH A BALL: Stand with your back, shoulders, and head against a wall and look straight ahead. Keep your shoulders relaxed and your feet 1 foot away from the wall and a shoulder's width apart. Place a rolled up pillow or a soccer-sized ball between your thighs. Keeping your head against the wall, slowly squat while squeezing the pillow or ball at the same time. Squat down until you are almost in a sitting position. Your thighs will not yet be parallel to the floor. Hold this position for 10 seconds and then slowly slide back up the wall. Make sure you keep squeezing the pillow or ball through-out this exercise. Repeat 10 times. Build up to 3 sets of 10.

7. KNEE STABILIZATION: Wrap a piece of elastic tubing around the ankle of your uninjured leg. Tie the tubing to a table or other fixed object.

- A. Stand on your injured leg facing the table and bend your knee slightly, keeping your thigh muscles tight. While maintaining this position, move your uninjured leg straight back behind you. Do 3 sets of 10.
- B. Turn 90° so your injured leg is closest to the table. Move your uninjured leg away from your body. Do 3 sets of 10.
- C. Turn 90° again so your back is to the table. Move your uninjured leg straight out in front of you. Do 3 sets of 10.
- D. Turn your body 90° again so your uninjured leg is closest to the table. Move your uninjured leg across your body. Do 3 sets of 10.

Hold onto a chair if you need help balancing. This exercise can be made even more challenging by standing on a pillow while you move your un-injured leg

8. RESISTED KNEE EXTENSION: Make a loop from a piece of elastic tubing by tying it around the leg of a table or other fixed object. Step into the loop so the tubing is around the back of your injured leg. Lift your uninjured foot off the ground. Hold onto a chair for balance, if needed.

- A. Bend your knee about 45 degrees.
- B. Slowly straighten your leg, keeping your thigh muscle tight as you do this. Do this 10 times. Do 3 sets. An easier way to do this is to perform this exercise